

# DALLAS

SEMICONDUCTOR

## DS1645EE

### Partitioned 1024K NV SRAM

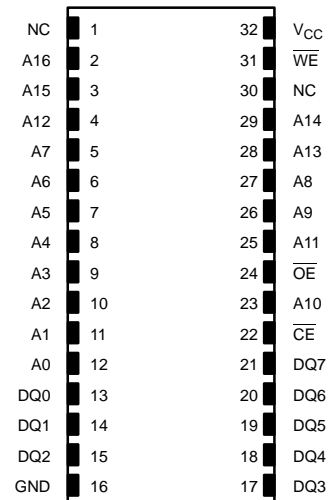
#### FEATURES

- Data retention in the absence of  $V_{CC}$
- Data is automatically protected during power loss
- Directly replaces 128K x 8 EPROM, EEPROM, or FLASH
- Write protects selected blocks of memory regardless of  $V_{CC}$  status when programmed
- Unlimited write cycles
- Low-power CMOS operation
- Over 10 years of data retention
- Standard 32-pin JEDEC pinout
- Available in either 70, 85, or 100 ns read access times
- Read cycle time equals write cycle time
- Full  $\pm 10\%$  operating range
- Lithium energy source is electrically disconnected to retain freshness until power is applied for the first time.
- Optional industrial temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , designated IND

#### DESCRIPTION

The DS1645EE 1024K Nonvolatile SRAM is a 1,048,576-bit, fully static, nonvolatile SRAM organized as 131,072 words by 8 bits. The DS1645EE has a self-contained lithium energy source and control circuitry which constantly monitors  $V_{CC}$  for an out-of-tolerance condition. When such a condition occurs, the lithium energy source is automatically switched on and write protection is unconditionally enabled to prevent garbled data. In addition the device has the ability to unconditionally write protect blocks of memory so that inadvertent

#### PIN ASSIGNMENT



32-PIN ENCAPSULATED PACKAGE  
(740 MIL EXTENDED)

#### PIN DESCRIPTION

A0 - A16	-	Address Inputs
$\overline{CE}$	-	Chip Enable
GND	-	Ground
DQ0 - DQ7	-	Data In/Data Out
$V_{CC}$	-	Power (+5V)
$\overline{WE}$	-	Write Enable
$\overline{OE}$	-	Output Enable
NC	-	No Connect

write cycles do not corrupt program and special data space. The nonvolatile static RAM can be used in place of existing 128K x 8 EPROM, EEPROM or FLASH conforming to the popular byte-wide 32 pin DIP standard. There is no limit on the number of write cycles which can be executed and no additional support circuitry is required for microprocessor interface. This part is functionally equivalent to the DS1645Y and differs only in pinout. See the DS1645Y/AB 1024K NV SRAM data sheet for technical details.